

## *Drosera hookeri* R.P.Gibson, B.J.Conn & Conran, a replacement name for *Drosera foliosa* Hook.f. ex Planch., *nom. illeg.* (Droseraceae)

Robert P. Gibson<sup>a</sup>, Barry J. Conn<sup>b</sup> & John G. Conran<sup>c</sup>

<sup>a</sup>North East Branch – Hunter, Environment Regulation & Protection,  
Department of Environment, Climate Change and Water, Newcastle, New South Wales 2300  
E-mail: robert.gibson@environment.nsw.gov.au

<sup>b</sup>National Herbarium of New South Wales, Royal Botanic Gardens and Domain Trust,  
Mrs Macquaries Road, Sydney New South Wales 2000  
E-mail: barry.conn@rbgsyd.nsw.gov.au

<sup>c</sup>Australian Centre for Evolutionary Biology & Biodiversity, Benham Building DX 650 312,  
School of Earth & Environmental Sciences, The University of Adelaide, South Australia 5005  
E-mail: john.conran@adelaide.edu.au

### Abstract

*Drosera hookeri* R.P.Gibson, B.J.Conn & Conran (Droseraceae) is proposed as a replacement name for *Drosera foliosa* Hook.f. ex Planch., *nom. illeg.*, non Elliot (1821).

**Keywords:** Australia, *Drosera peltata* complex, *Drosera*, Droseraceae, nomenclature, taxonomy.

### Introduction

Recent studies have shown that there are discrete taxa differing in growth habit, indumentum, sepal shape, petal colour and seed structure within the *D. peltata* complex (e.g. Pierson 1990; Gibson 1992a, 1992b, 1993). This has seen the reinstatement of *D. auriculata* Backh. ex Planch. in several treatments (e.g. Marchant *et al.* 1982; Harden 1990; Salmon 2001), the description of *Drosera bicolor* Lowrie & Carlquist (1992) and the resurrection of both *D. foliosa* Hook.f. ex Planch. and *D. gracilis* Planch. by Clayton (2003a, 2003b, 2005a, 2005b) and Morris (2009). However *D. foliosa* Hook.f. ex Planch., first published in 1848, is a later homonym for *D. foliosa* Elliott (1821), and so the Australian taxon needs to be renamed.

*Drosera foliosa* Hook.f. ex Planch. has usually been placed in synonymy under a very broadly circumscribed and variable *D. peltata* Thunb. (Marchant *et al.* 1982), within *D. peltata* subsp. *peltata* (Conn 1981) or sometimes as *D. peltata* var. *foliosa* Benth. (Bentham 1864).

Planchon (1848) cites the type of *D. foliosa* as ‘Hab. in insula Van Diemen loco dicto Formosa; Gunn, No. 1027 in Herb. Hook.’ There are two sheets of *D. foliosa* held at the herbarium of the Royal Botanic Gardens, Kew (K) labelled *Gunn 1027* (RBG Kew 2006–), one (Fig. 1) with three collection labels that read:

- ‘*D. foliosa* J.D.H. 1027/1842, Formosa, 7/12/42’ (K215054) – this material was collected from the W.E. Lawrence Estate ‘Formosa’ in the Midlands region of Tasmania (Buchanan 1988).
- ‘*Drosera foliosa* J.D.Hook., V[an] D[iemen’s] Land, Gunn, Tasmania, Fl. Tasmania, t. 6’ (K215071);

- ‘1027 George Town, both sides of River, 23/10/44’ (K215072) – included with this collection is the following note in R.C. Gunn’s hand: ‘1027. *Drosera foliosa* nsp. [new species][specific epithet ‘foliosa’ and ‘nsp’ in J.D. Hooker’s hand]. I saw this very abundantly at George Town on both sides of the Tamar [River] growing in rather marshy grassy spots. I at first thought it might have been a var. of my 448 [refer K215590, K215592–95], but I now feel satisfied that it is permanently [sic] distinct.’

The second sheet (refer RBG Kew 2006–) is a mixed collection, including one from *Herbarium Benthamianum* that reads: ‘1027 *Drosera foliosa* Hook. fil. Planch *Ann. Sci. Nat. III. 9. 298, Tasmania. R. Gunn, 1844*’ (accession K215073).

On the basis of Planchon’s (1848) reference to the type specimen, Conn (1981) considered that the 1842 Formosa collection represented the holotype, noting that the other *Gunn 1027* specimens would be syntypes. However, as *Gunn 1027* is a species identification reference, not a collection number (George 2009), the type would therefore be the one mentioned in Planchon’s (1848) protologue. Because this type collection consists of multiple specimens from a single gathering, we here designate one specimen as the lectotype (refer Figure 1), with the remainder of the gathering as isolectotypes (ICBN Art. 9.15). The other two *Gunn 1027* collections are either not from the type locality (K215072) or are not from Hooker’s Herbarium (K215073), and as they are not mentioned by Planchon (1848), it is here presumed that they were not seen by him. The type status of the remaining unnumbered *Gunn* collection (K215071) is more ambiguous, being without date



Fig. 1. *Drosera hookeri* type (accession identifier K215054, as *D. foliosa* Hook. f. ex Planch.) with lectotype (framed) and remainder of specimens of this accession isolectotypes (upper seven collections). Lower right four specimens (accession K215071) represent possible syntypes. The central three specimens and lower left specimen (possibly all accession K215072) are not regarded as type material. Image copyright of the Board of Trustees of the Royal Botanic Gardens, Kew, used with permission.

or specific location. It is here considered to represent possible syntype material. Additional R.C. Gunn collections of this taxon held at MEL and NSW, include: Van Diemensland, com[municated] Prof. Lindley, 1846 [all in John Lindley's hand], Gunn, ex Herbarium O.W. Sonder (MEL96616) and George Town, 16 Nov 1843, Gunn 1027 (NSW146501). Neither collection is regarded as type material.

Examination of other possible names within the *D. peltata* complex reveals that apart from *D. peltata* and *D. auriculata* Backh. ex Planch. there are only two other available names for plants in this complex from Tasmania: *D. gracilis* Hook.f. ex Planch. and *D. peltata* var. [β] *gunniana* Planch. (Planchon 1848). However, *D. gracilis* is a separate taxon that occurs across south-east Australia (Gibson 1992b; Clayton 2003a, 2003b, 2005a, 2005b; Morris 2009), distinguished by a narrow stem which is normally leafless on the distal half and by its usually red foliage. Therefore, it is not available as a replacement name. Similarly, Hooker (1859) makes it clear that *D. peltata* var. *gunniana* is separate and clearly distinguishable from *D. foliosa* Hook.f. ex Planch. by being single-stemmed and less stout or shrubby, with researchers generally considering var. *gunniana* to be a localised Tasmanian form within *D. peltata* sens. str. (Conn 1981; Walker 2006–).

Since there is no available alternative name for *D. foliosa* Hook.f. ex Planch., a new epithet for this taxon is required if it is to be recognised. Both R.C. Gunn and J.D. Hooker recognised this taxon as distinct (refer handwritten note accompanying K215072, see above). Accordingly, *D. hookeri* R.P.Gibson, B.J.Conn & Conran is proposed here as the replacement name. The new epithet commemorates Joseph Dalton Hooker (1817–1911) who originally recognised this taxon and provided a manuscript name which was used by J.É. Planchon (1848).

***Drosera hookeri* R.P.Gibson, B.J.Conn & Conran,  
nom. nov.**

*Drosera foliosa* Hook.f. ex Planch., Ann. Sci. Nat. sér 3, 9: 298 (1848), nom. illeg., non *Drosera foliosa* Elliott, Sketch Bot. S. Carolina 1: 376 (1821). *Drosera peltata* Thunb. var. *foliosa* (Hook.f. [ex Planch.]) Benth., Fl. Austral. 2: 465 (1864). — **Lectotype (here selected):** Formosa, Tasmania, 7 Dec. 1842, R.C.Gunn 1027 (K215054, top row, middle specimen; as indicated in Fig. 1). **Isolectotype:** remaining specimens of K215054. **Possible syntype:** V[an] D[iemen's] Land, Gunn s.n., Tasmania (K215071).

*Drosera peltata* auct. non Thunb.: Marchant, Fl. S. Austral. 1: 363 (1986), partly.

*Drosera peltata* auct. non Thunb. subsp. *peltata*: Marchant et al., Fl. Austral. 8: 22–24 (1982), partly.

*Drosera hookeri* has generally villous to pubescent calyces, or at least fringed sepal margins, as found in *D. gracilis*, *D. peltata* and *D. bicolor*. *Drosera hookeri* is also similar to *D. peltata* except that the former is a multi-branched herb, whereas the stems of *D. bicolor* and *D. peltata* are usually unbranched or have only

a few branches distally. It is also a more robust plant than *D. gracilis*, with stems about 1–2 mm in diameter, whereas those of *D. gracilis* are up to about 0.5 mm diameter.

**Distribution and ecology.** All species discussed here, except for *D. gracilis*, occur in seasonally-moist infertile mineral-based soils. *Drosera hookeri* usually occurs in herbfields and low open shrublands from southern inland New South Wales to central Victoria and west to southern South Australia. It also occurs in north-eastern Tasmania. *Drosera peltata* grows in woodlands and open forests and occurs widely from southern Tasmania to the Darling Downs in Queensland, extending inland through western New South Wales to south eastern South Australia. It also occurs in New Zealand (Salmon, 2001). The *D. peltata* 'Western Australian Form' sensu Lowrie (1987) occurs amongst granite outcrops in southern inland Western Australia. *Drosera bicolor* occurs in deep sandy soil in open low *Banksia* woodland just west of Lake Chidnap in southern inland Western Australia. *Drosera gracilis* usually grows in peaty soils that are permanently rather than seasonally wet and it occurs in wetlands of the coast and ranges from north-eastern NSW to Tasmania.

**Acknowledgements**

The School of Earth & Environmental Sciences, The University of Adelaide is thanked for provision of resources for this research. The Board of Trustees of the Royal Botanic Gardens, Kew is thanked for permission to use the images of the type specimens. Dr Jürgen Kellermann and Mrs Robyn Barker (both AD) are thanked for comments on the manuscript and advice on nomenclatural matters. Pina Milne (MEL) kindly assisted BJC examine R.C. Gunn collections of *Drosera* held at MEL.

**References**

- Bentham, G. (1864). Droseraceae. In: *Flora Australiensis: a description of the plants of the Australian territory* 2: 452–470. (L. Reeve & Co.: London).
- Buchanan A.M. (1988). The Tasmanian collecting localities of Ronald Gunn & Joseph Milligan. *Tasmanian Herbarium Occasional Publication* 1: 1–56.
- Clayton, C. (2003a). *Carnivorous plants in New South Wales, Australia: a field guide and cultural notes to the indigenous species*. (Published by the author: Somerville, Vic.).
- Clayton, C. (2003b). *Carnivorous plants in Tasmania, Australia: a field guide and cultural notes to the indigenous species*. (Published by the author: Somerville, Vic.).
- Clayton, C. (2005a). *Carnivorous plants in South Australia, Australia: a field guide and cultural notes to the indigenous species*. (Published by the author: Somerville, Vic.).
- Clayton, C. (2005b). *Carnivorous plants in Victoria, Australia: a field guide and cultural notes to the indigenous species*, rev. ed. (Published by the author: Somerville, Vic.).
- Conn, B.J. (1981). The *Drosera peltata*–*D. auriculata* complex. *Journal of the Adelaide Botanic Gardens* 3: 91–100.
- Elliott, S. (1821). *A sketch of the botany of South-Carolina and Georgia in two volumes*, Vol. 1. (J.R. Schenck: Charleston, SC).

- George, A.S. (2009). *Australian botanist's companion*. (Four Gables Press: Kardinya).
- Gibson, R. (1992a). *Drosera peltata*. *Australian Carnivorous Plant Society Bulletin* 11: 9–11.
- Gibson, R. (1992b). Observed variation in *Drosera auriculata* and *Drosera peltata*. *Carnivorous Plant Newsletter* 21: 75–78.
- Gibson, R. (1993). *Drosera peltata* var. *foliosa*. *Australian Carnivorous Plant Society Bulletin* 12: 4.
- Harden, G.J. (1990). Droseraceae. In: Harden, G.J. (Ed.), *Flora of New South Wales* 1: 493–496. (New South Wales University Press: Kensington).
- Hayne, F.G. (1800). *Drosera intermedia*. *Schrader's Journal für die Botanik* 1: 37.
- Hooker, J.D. (1859). Droseraceae. *Flora Tasmaniae* 2: 28–31.
- Lowrie, A. (1987) *Carnivorous Plants of Australia*, Vol. 1. (University of Western Australia Press: Perth).
- Lowrie, A. & Carlquist, S. (1992). Eight new taxa of *Drosera* from Australia. *Phytologia* 73: 98–116.
- Marchant, N., Aston, H.I. & George, A.S. (1982). Droseraceae. In: George, A.S. (Ed.), *Flora of Australia* 8: 9–64. (Government Printer: Canberra).
- Marchant, N.G. (1986). Droseraceae. In: Jessop, J.P. & Toelken, H.R. (Eds), *Flora of South Australia* 2: 360–363. (South Australian Government Printer: Adelaide).
- Morris, D.I. (2009). 96 Droseraceae. *Flora of Tasmania online*, version 2009.1: 1–6. <[www.tmag.tas.gov.au/floratasmania](http://www.tmag.tas.gov.au/floratasmania)> [accessed 3 Oct. 2009].
- Pierson, B. (1990). A new *Drosera* species. *Carnivorous Plant Newsletter* 19: 8–9.
- Planchon, J.É. (1848). Sur la famille des Droséracées. *Annales des Sciences Naturelles Botanique (Paris)*, sér. 3 9: 285–309.
- Rodway, L. (1903). *The Tasmanian flora*. (Government Printer: Hobart).
- Salmon, B. (2001). *Carnivorous plants of New Zealand*. (Ecosphere Publications: Auckland, NZ).
- Royal Botanic Gardens Kew (2006–). *The Herbarium Catalogue* <<http://www.kew.org/herbcat>> [accessed 15 January 2010].
- Thunberg, C.P. (1797). *Dissertatio botanica de Drosera*. (J.F. Edman: Upsaliæ).
- Walker, R. (2006–). *Carnivorous Plants Database*. <[http://www.omnisterra.com/bot/cp\\_home.cgi](http://www.omnisterra.com/bot/cp_home.cgi)> [accessed 5 Feb. 2010].